BioSense

Public Health Surveillance Through Collaboration

What Is BioSense?

BioSense tracks health problems in the United States as they evolve. It provides public health officials with the data, information, and tools needed to better prepare for and coordinate responses to safeguard and improve the health of Americans.

BioSense 2.0

BioSense 2.0 launched in November 2011. It is a collaborative syndromic surveillance system that integrates local- and state-level health data to provide local, state, and federal partners and CDC programs a near real-time nationwide all-hazards picture. This collaborative data exchange system allows users to track health issues as they evolve. BioSense is the only public health tool that provides a picture of what is happening right now with any health condition, anywhere and everywhere in the country.

BioSense 2.0 pulls together information on emergency department visits and hospitalizations from multiple sources, including the Department of Veterans Affairs (VA) and the Department of Defense (DoD), more than 100 hospitals that currently report directly to the Centers for Disease Control and Prevention (CDC) from around the country, and state or local health departments that have agreed to share data from their own emergency department monitoring systems. Analysis of these data provides insight into the health of communities and the country. Such data are vital to guide decision making and actions by public health agencies at local, regional, and national levels.

BioSense 2.0 was developed and is governed by an active collaboration of CDC, state and local health departments, and other public health partners.

The BioSense program is administered by the Division of Notifiable Diseases and Healthcare Information in CDC's Public Health Surveillance and Informatics Program Office (proposed); Office of Surveillance, Epidemiology, and Laboratory Services.

Unique Features of BioSense 2.0

Providing Data in a Distributed Cloud Environment

- BioSense 2.0 is the first Department of Health and Human Services system to move completely to a distributed cloud computing environment. This distributed environment, governed jointly by state, local, and federal representatives, provides local and state stakeholders secure data storage space and analytics tools at no cost. Most importantly, it provides a collaborative shared environment to advance public health surveillance practice and activities.

Sharing Data Across Jurisdictional Lines

- BioSense 2.0 is the only public health surveillance system that allows state and local health departments and CDC to quickly share information with each other across city, county, or state borders. When joining BioSense, state and local health departments sign a data use agreement (DUA). The DUA allows them, along with CDC, to conduct enhanced surveillance in emergencies and for events such as the presidential inauguration; the Super Bowl; or any other local, regional, or national event or emergency.

Helping State and Local Health Departments Meet Meaningful Use Requirements

- BioSense 2.0 expands the capacity of state and local health departments to support the electronic health records meaningful use programs by providing a catcher's mitt for syndromic surveillance data. This feature gives state and local health departments access to timely data so they can implement public health interventions in their communities and across jurisdictional boundaries.

Office of Surveillance, Epidemiology and Laboratory Services
Division of Notifiable Diseases and Healthcare Information

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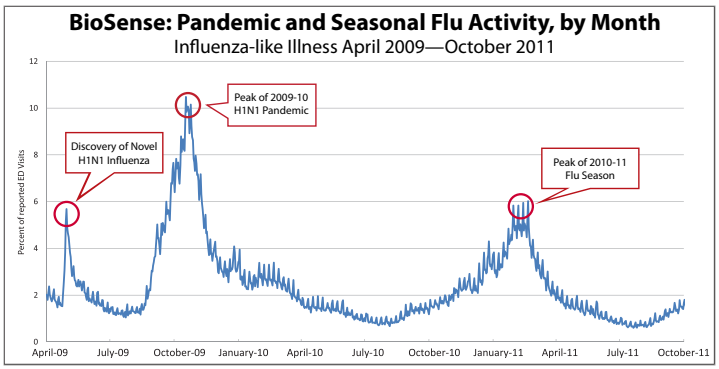
BioSense Data Enhances Situation Awareness

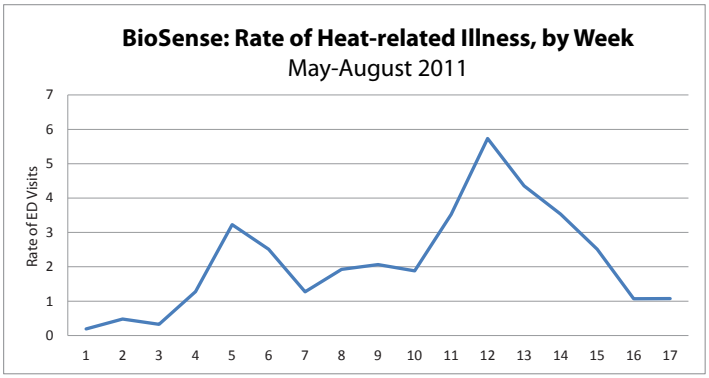
2009–2010 H1N1 Flu Pandemic

- From the beginning of the H1N1 pandemic in April 2009, the CDC Emergency Operations Center and CDC's Influenza Division used BioSense data from emergency departments, laboratories, and pharmacies to make decisions about immunization recommendations, school and public building closures, and other steps in the response.
- As demonstrated in the H1N1 pandemic, BioSense is currently the only source of data that can assess the severity of illness in emergency rooms.



2010 Deepwater Horizon Gulf Oil Spill

- The BioSense program worked with state and local jurisdictions in Alabama, Florida, Louisiana, Mississippi, and Texas; VA; and DoD to monitor 21 specific syndromes and several mental health conditions from 86 coastal healthcare facilities. BioSense produced daily situation awareness reports for state and local responders in affected areas, which allowed responders to assure Gulf Coast residents that the immediate negative health effect from the oil spill was limited.



2011 U.S. Heat Wave

- Data collected by BioSense between May and August 2011 were used to monitor levels of heat-related illness during this period. Data were shared with state health departments in parts of the country most affected by the heat wave so they could implement preventative and responsive protocols.

2011 Japanese Tsunami and Nuclear Disaster in Fukushima

- After the Fukushima Daiichi nuclear disaster following the 2011 Japanese earthquake and tsunami, the BioSense program monitored healthcare activity in 20 DoD facilities in Japan. BioSense used cluster detection methods to identify syndromes associated with injuries and possible radiation exposure as well as search for specific ICD-9-CM codes associated with radiation exposure. The data demonstrated that American troops and family members showed no increase in radiation sickness or injuries during and after this event.

2012 Dengue Detection Project in Florida and Hawaii

- Data from BioSense were used to enhance surveillance for dengue by identifying people presenting with dengue-like symptoms (including fever and rash) at VA facilities and referring likely cases of dengue for further investigation by local health officials in Florida and Hawaii and the CDC Dengue Branch.

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